



Financing LNG Projects

Public Workshop on LNG Access Issues and
Security of Supply

June 1-2, 2005 Sacramento, California

- Global outlook for LNG demand and supply
- Current industry and financing trends in LNG
- The LNG value chain
- Financing issues for LNG projects
- Conclusions

About us

Standard Chartered – 150 years and growing

- **Combining our 150 year presence across the region, we aim to be the leading international bank in all the markets in which we operate**
- **Our Global Presence**
 - FTSE 100 and Hong Kong Stock Exchange listed
 - FSA regulated
 - Long term credit rating A2 (Moody's) and A (S&P)
 - 750 offices in 55 countries
- **Our Local Presence**
 - On the ground expertise in Asia, Africa, the Middle East, India region and Latin America
 - Facilitates delivery of innovative products, supported by quality delivery systems and excellent customer service

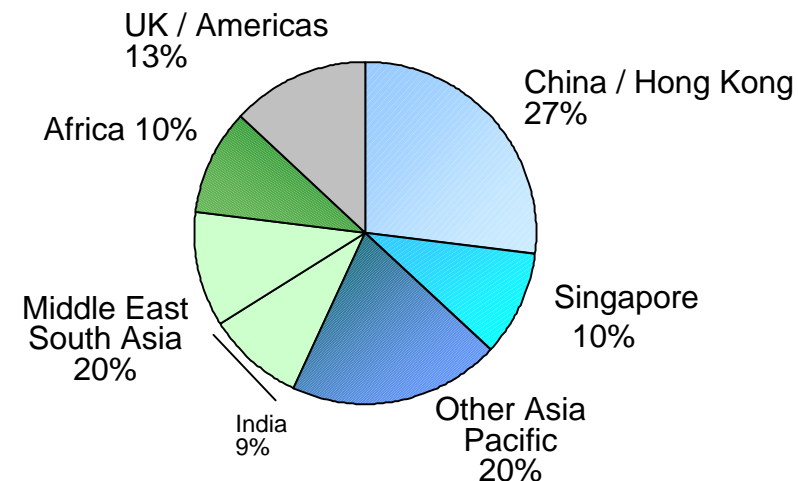
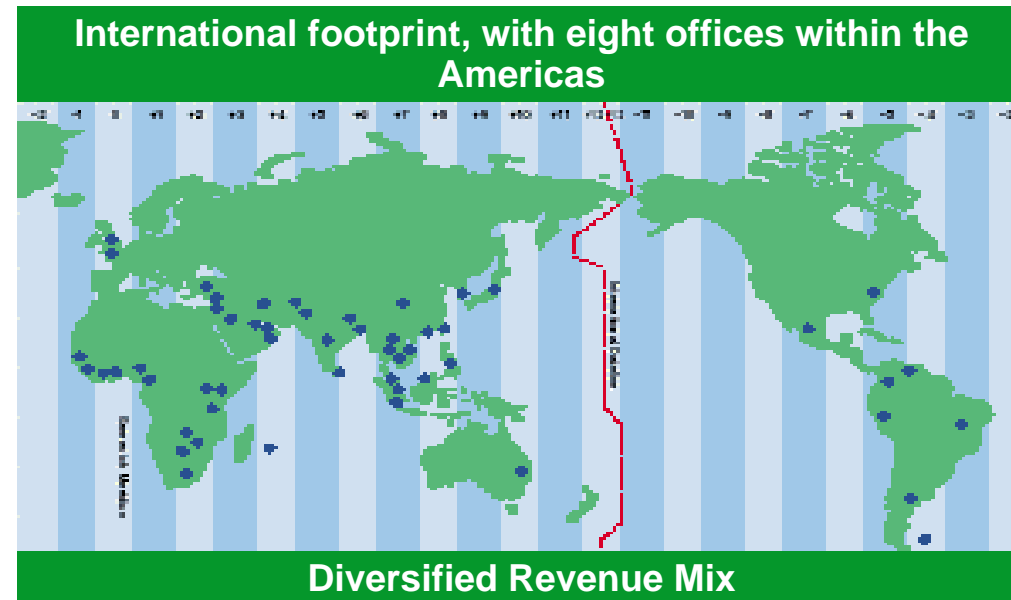
■ Key Statistics

Total Assets
Total Loans
Total Deposits
RWA & Contingents

USDb

125
82
95
81

As at 30 June 2004



Current

Greenfield LPG Project (Yemen)

USD 100m (est)
Project Financing

Financial Adviser

Standard Chartered 



Oman LNG (Oman)

USD 175m (2004)
Project Financing

Mandated Lead Arranger

Standard Chartered 

Liquefied Natural Gas
Egyptian LNG 

Egyptian LNG (Egypt)

USD 950m
Project Financing

Mandated Lead Arranger

Standard Chartered 



Oman LNG (Oman)

USD 1,300m (2001)
Project Re-Financing

Mandated Lead Arranger

Standard Chartered 



Qalhat LNG (Oman)

USD 648m
Project Financing

Mandated Lead Arranger

Standard Chartered 

SASOL



Oryx GTL (Qatar)

USD 700m
Project Financing

Lead Arranger

Standard Chartered 



GOO

Oman Gas Company (Oman)

USD 410m
Project Financing

Co-Arranger

Standard Chartered 



Dolphin Energy (U.A.E)

USD 1,350m
Project Financing

Mandated Lead Arranger

Standard Chartered 



Qatar Gas II
(Qatar)
USD 3.5bn
Project Financing

Mandated Lead Arranger


Standard Chartered 



Dolphin Energy
(Qatar)
USD 1.35bn
Project Financing


Mandated Lead Arranger

Standard Chartered 



Rasgas
(Qatar)
USD 1bn
Project Financing

Mandated Lead Arranger

Standard Chartered 

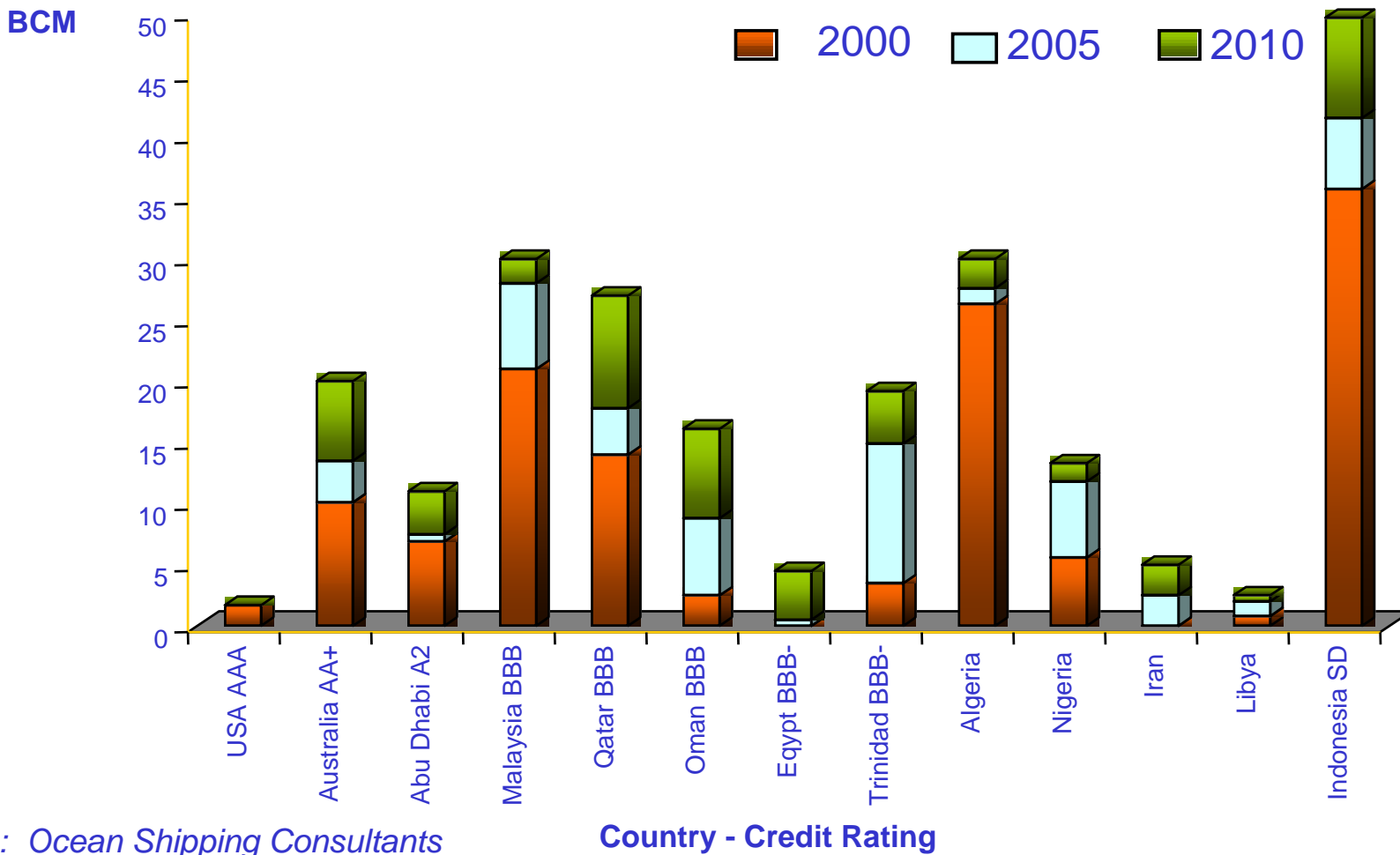


Sabine Pass
(USA)
CHENIERE
US\$800 million
Project finance of LNG Terminal in
USA

Standard Chartered 

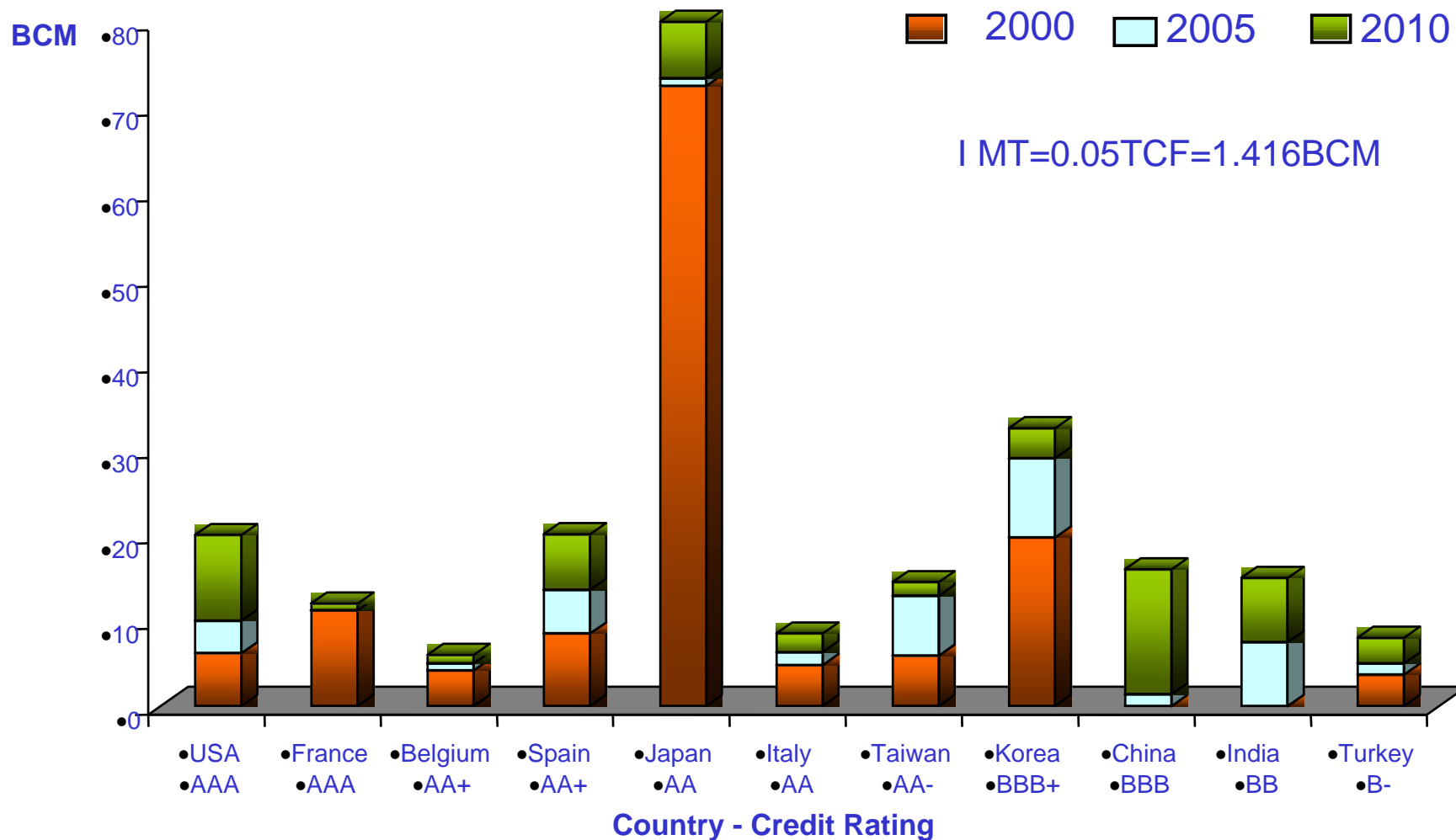
- **1910s - liquefaction of gas to extract helium**
- **1940s - first peak shaving plant constructed in Cleveland, Ohio**
- **1944 - first major accident in Cleveland**
- **1959 - voyage of Methane Pioneer from USA Gulf to UK**
- **1964 - Arzew plant in Algeria commissioned**
 - first commercial LNG deliveries to UK
- **1969 - first deliveries of LNG to Japanese market (from Kenai, Alaska)**
- **1977 - first Middle East LNG plant in Abu Dhabi**
- **2000 - annual LNG trade reaches 100 mtpa**

Global LNG – Projected Supply



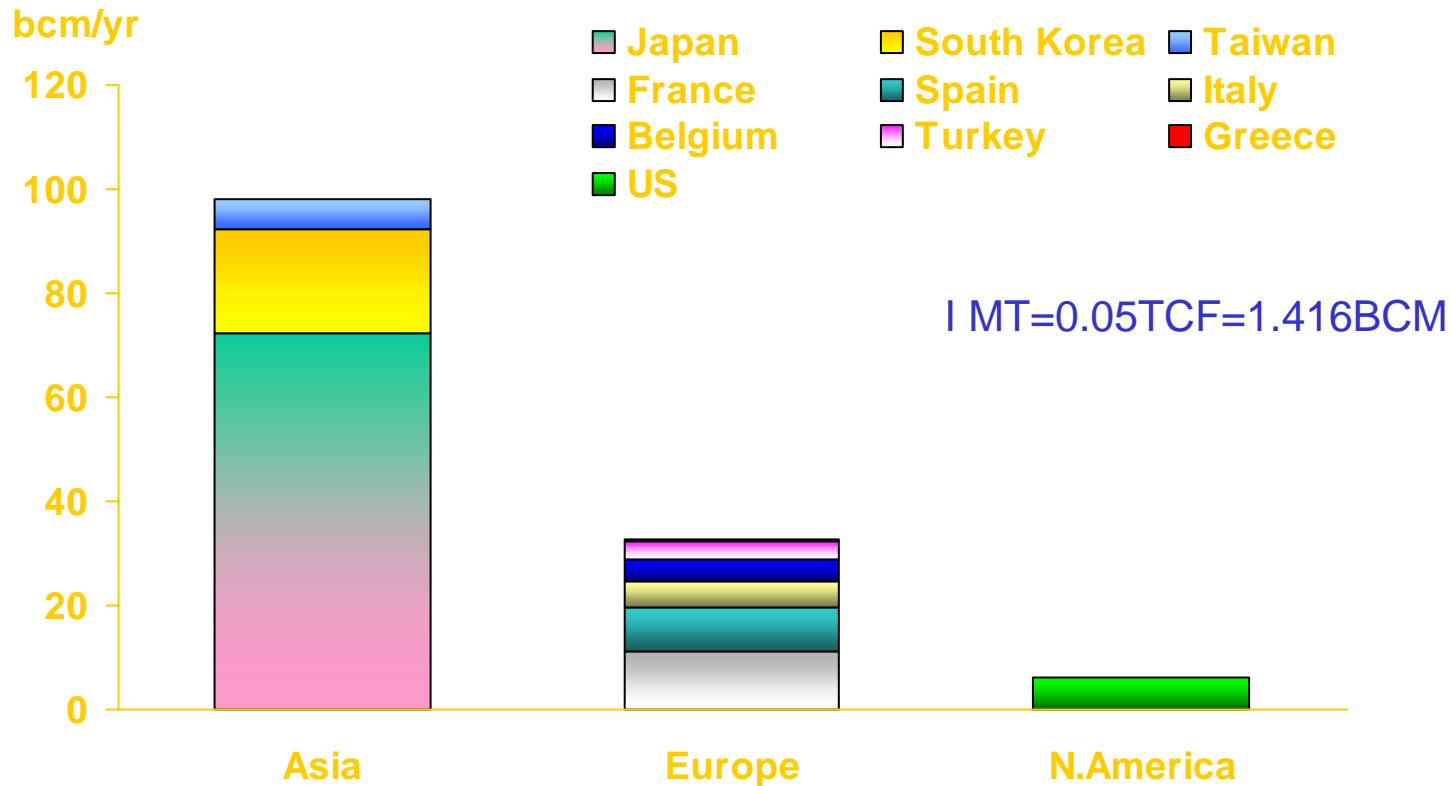
Source: Ocean Shipping Consultants

Global LNG - Projected Demand



Source: Ocean Shipping Consultants

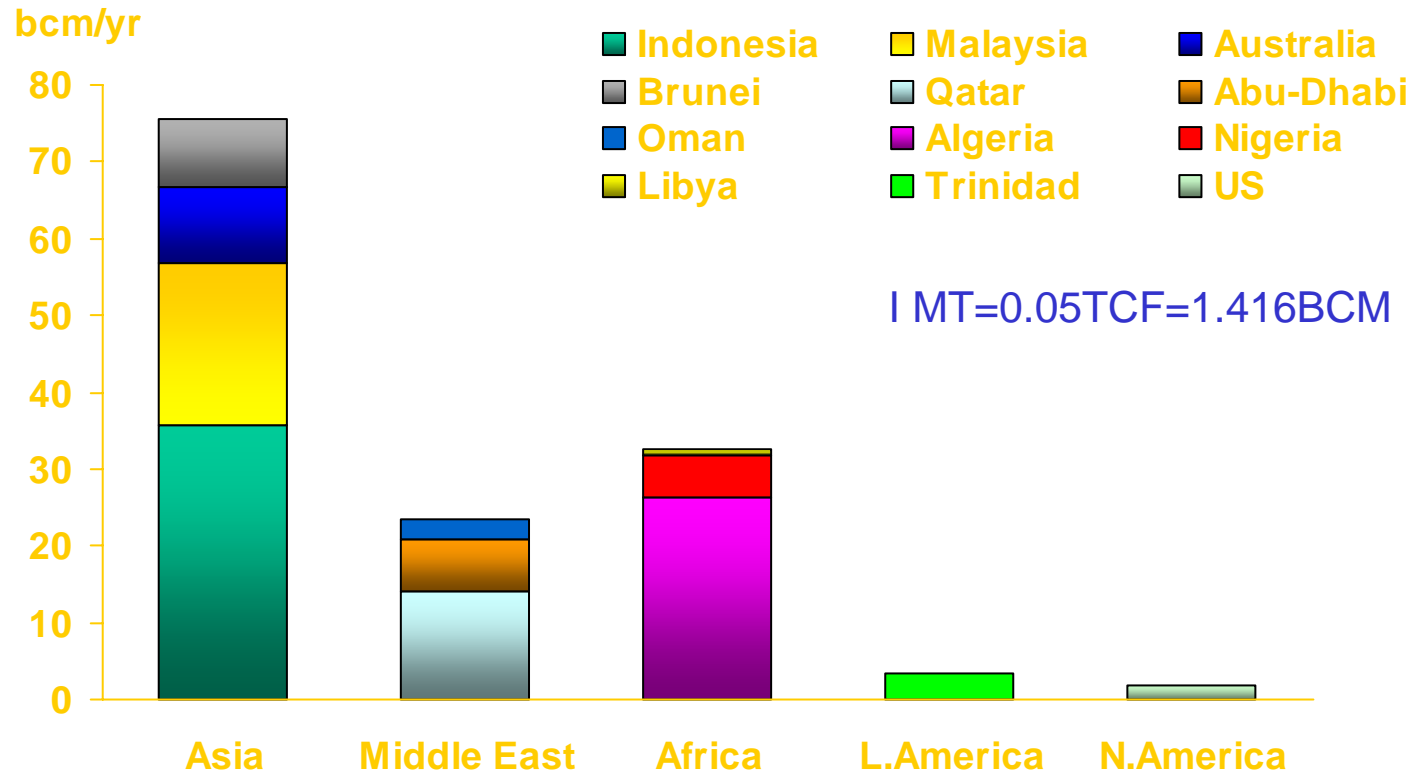
Global LNG Imports



Source: Ocean Shipping Consultants

Asia imports over 70% of world-wide LNG

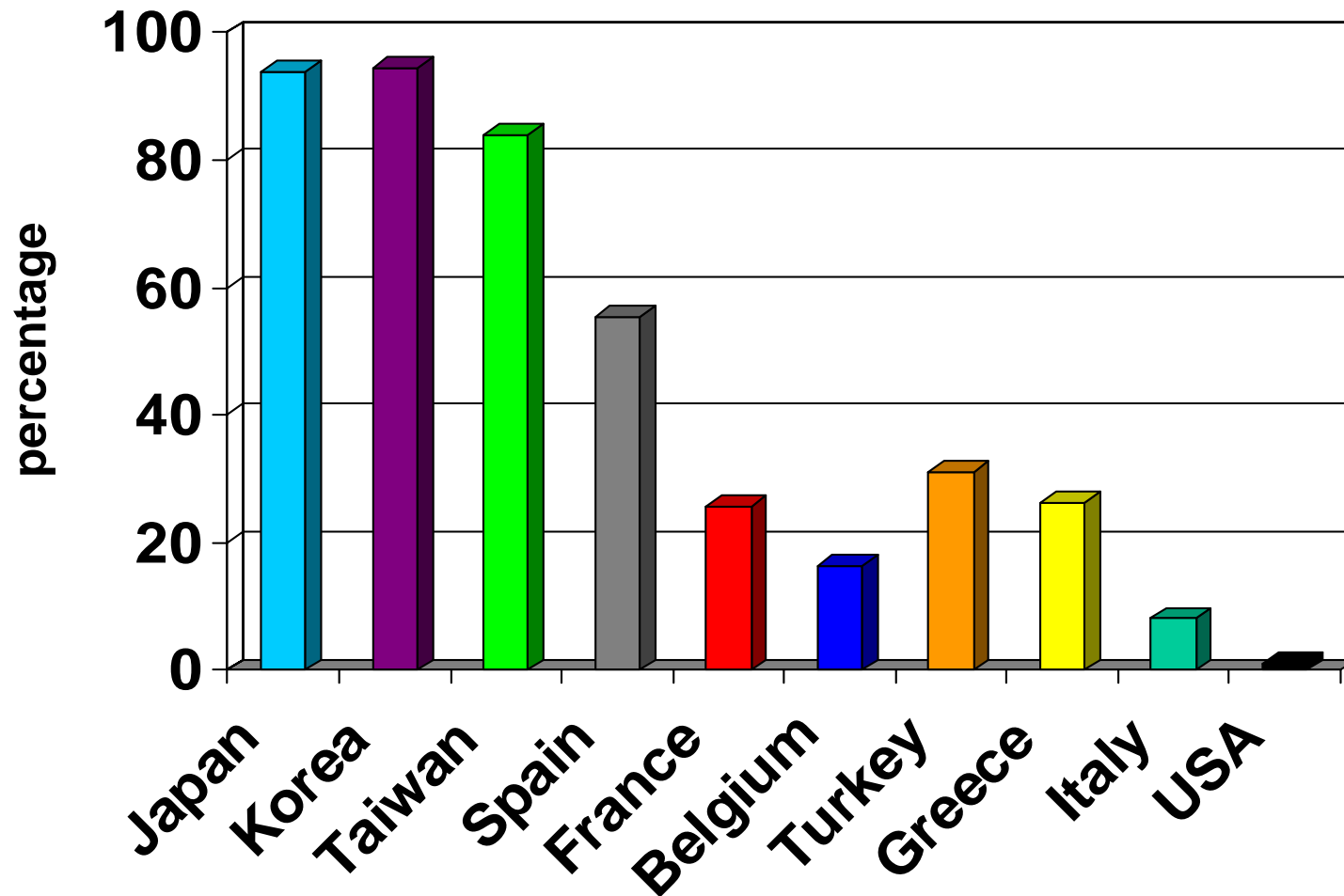
Global LNG Exports



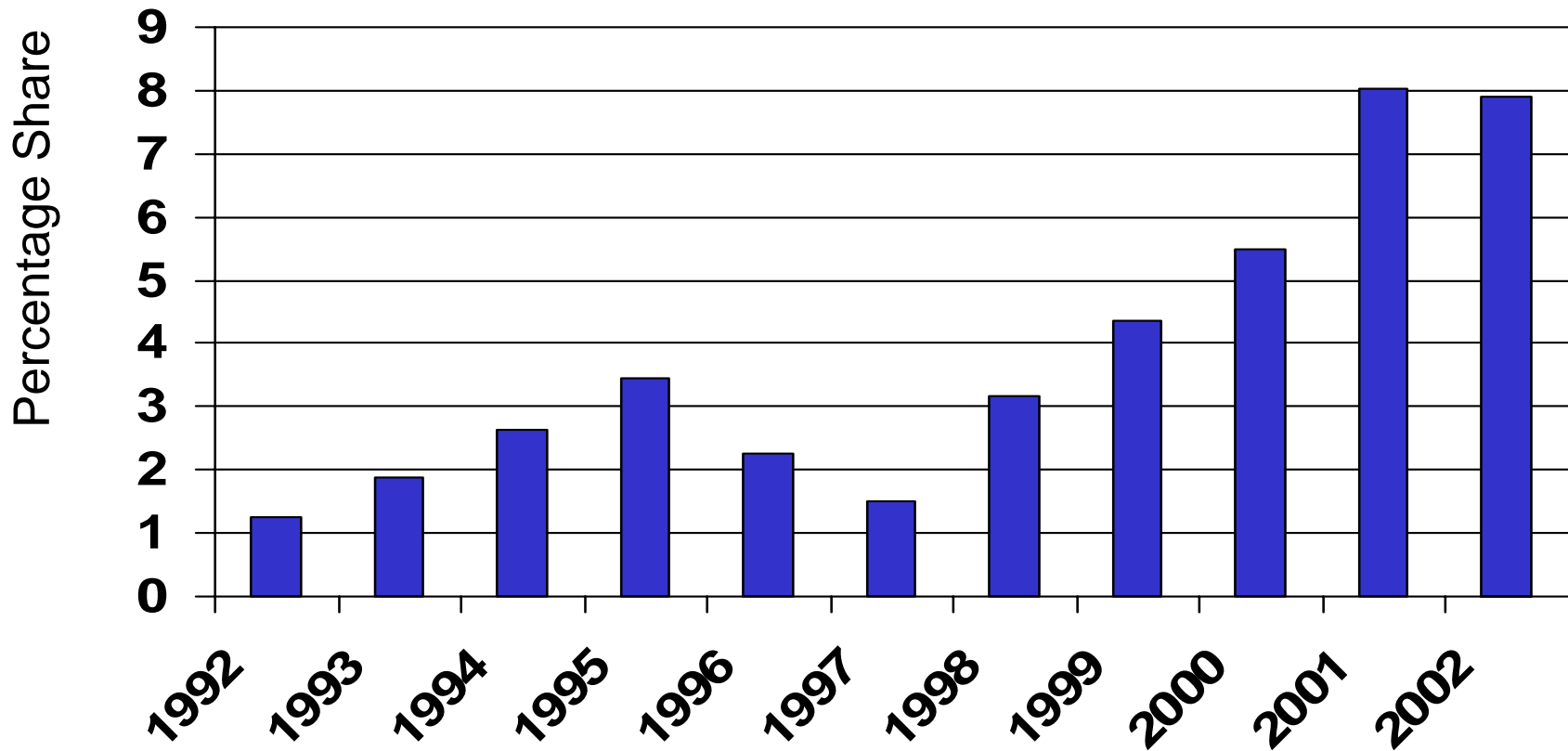
Source: Ocean Shipping Consultants

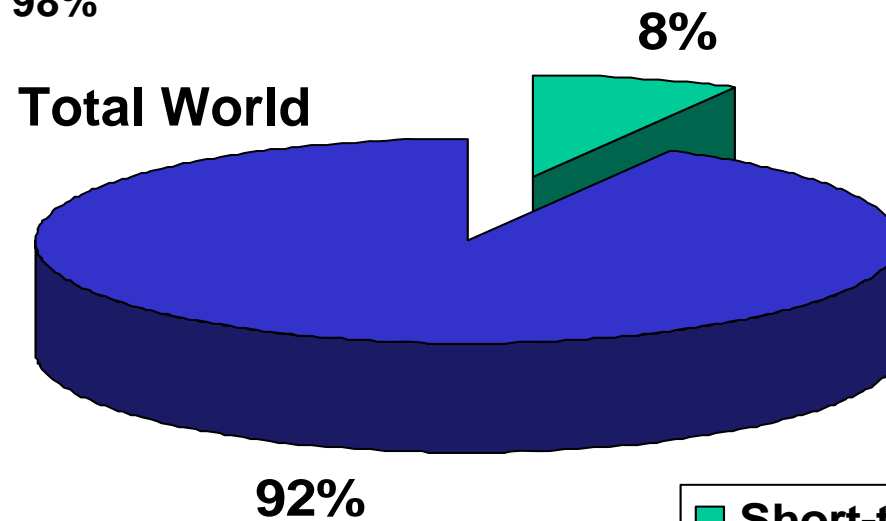
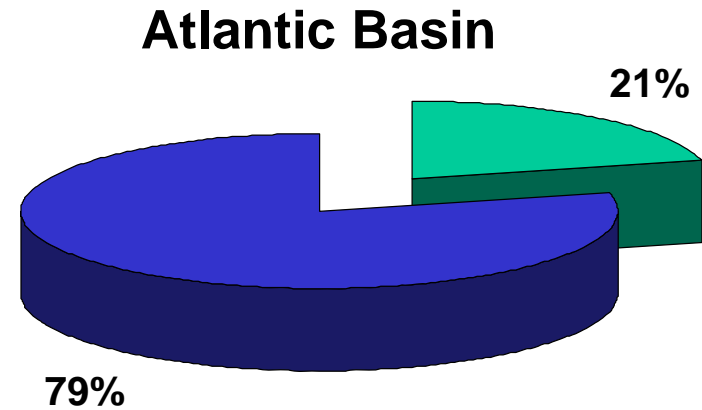
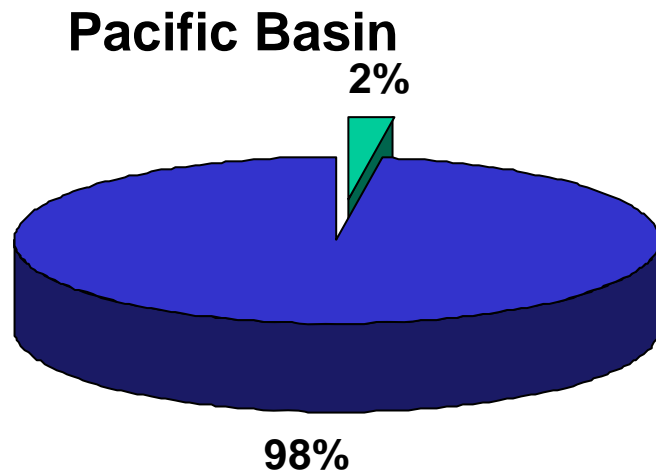
Over 70% of global LNG exports are from Asia and middle east

US LNG is only 2% of total gas consumption ...acts as a swing factor



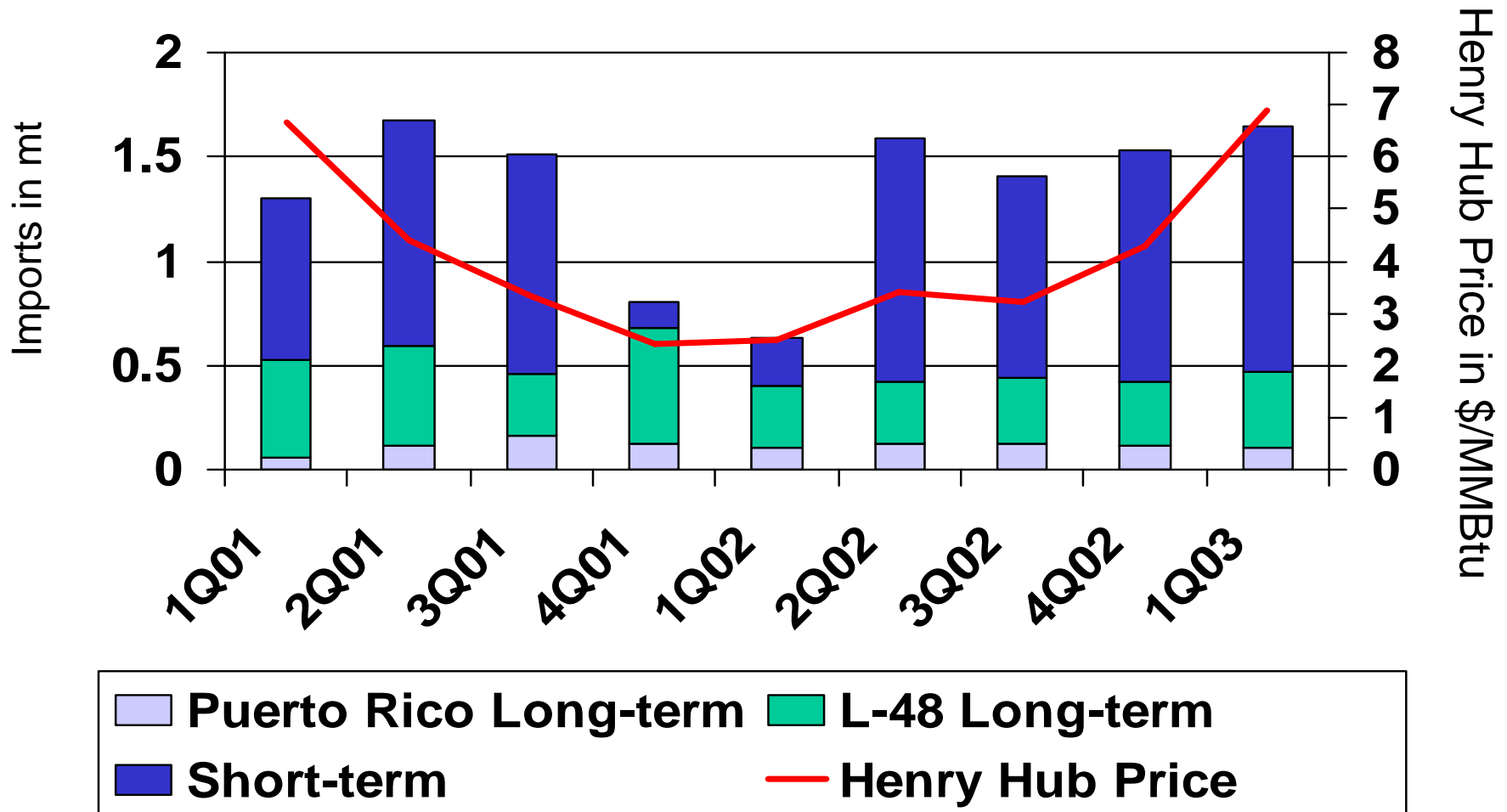
Short-Term Trades as Percentage of Total LNG Trades 1992-2002





■ Short-term ■ Long-term

Quarterly US LNG Imports (Including Puerto Rico) and Henry Hub Prices 2001-1Q03



■ General Trends

- Technology and efficiency improvements have reduced delivered cost of LNG.
- Regional Connectivity - increased cargo swapping.
- Increased downstream vertical integration by oil majors.

■ Contract Structure

- Reduction in take-or-pay minimums; buyers favoring FOB purchases.
- Inclusion of optional cargo's (ala Korean contract with RasGas).
- Eliminating destination clauses - major issue in EU.
- Movement away from oil-based contract pricing to gas-linked pricing.

■ US LNG

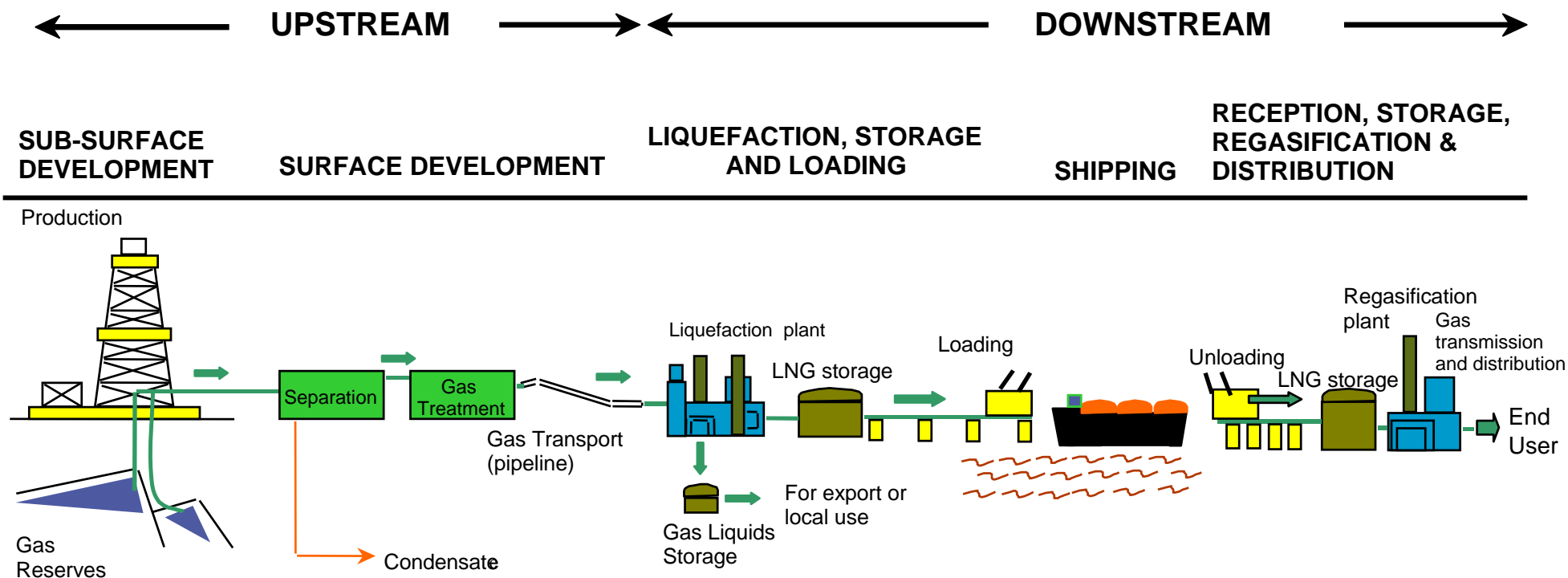
- US/Canadian gas supply basins experiencing declining deliverability.
- Current price curve forecasts for natural gas are attractive.
- Liquidity of US gas market should allow LNG volumes to be placed w/out distorting market price indices.
- Regulatory environment is favorable - FERC ruling on Hackberry/Cameron.

- **Gas sales pay for more than just the regas terminalling**

- **Interdependence of LNG Chain:**
 - ↓ Upstream gas production and pipelines
 - ↓ Upstream liquefaction and terminalling
 - ↓ Transportation
 - ↓ Downstream terminalling and regasification
 - ↓ Downstream trunkline(s)

- **Interdependence with respect to:**
 - ↓ Contract Harmonization – tenor, termination rights, force majeure, start-up,
 - ↓ Project Development Timing
 - ↓ Cash Flow Reliance
 - ↓ Risk Allocation

The Project-Integrated Gas Chain



- Reserves
- Timing of Development
- Completion
- Ability of Operator
- Environmental

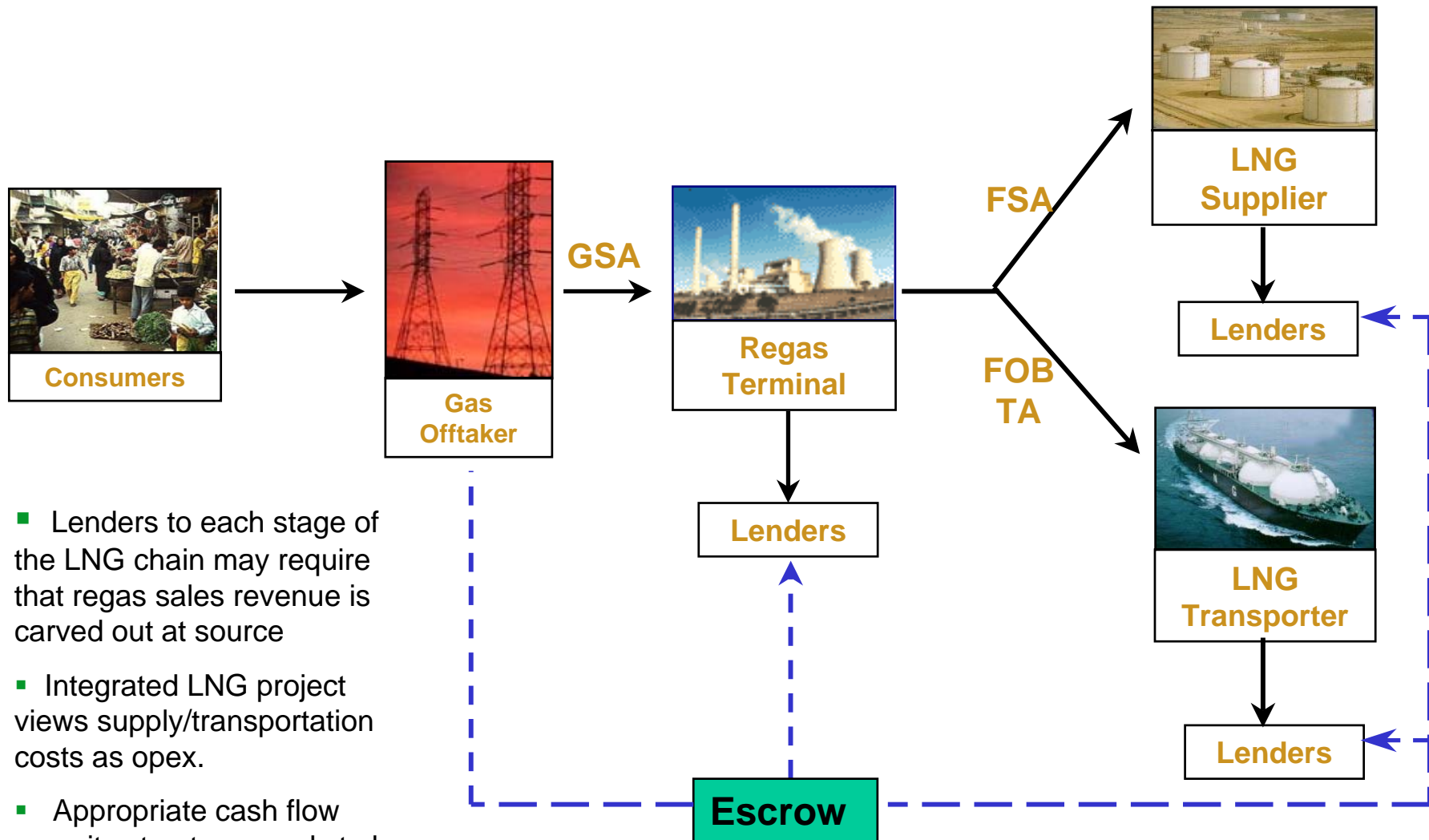
- Technology
- Financing
- Political
- Cost Overruns

- Technical
- Completion
- Environmental
- Political
- Timing of Development
- Ability of Operator
- Cost Overruns

- CIF or FOB
- Construction
- Financing
- Operator

- End User Gas/
- Electricity Market
- Credit Risk (Offtake)
- Infrastructure
- Political

Sample LNG Value Chain



- Lenders to each stage of the LNG chain may require that regas sales revenue is carved out at source
- Integrated LNG project views supply/transportation costs as opex.
- Appropriate cash flow security structure needs to be established.

■ Merchant

- Volume and pricing risk not hedged
- US power market collapse has undermined merchant risk
- Gas price volatility much greater than oil prices - fuel oil switching
- Large, capital intensive projects
- Limited examples

■ Partial Contracts

- Volume and pricing risk is partially hedged - firm volume offtake tied to gas price index
- Requires deep and liquid gas markets
- LNG delivery to locations away from price index increases basis risk
- Requires robust project economics and low breakeven prices

■ Tolling – Push or Pull

- Long-term capacity reservation charge
- Credit reliance on tolling counterparty
- Provides opportunity to increase leverage

- Market connectivity has increased but LNG remains a regional versus global market.
- Interdependence of LNG chain presents unique financing challenges
- Important to ensure that component parts of LNG chain can stand alone
- Ensure that upstream lenders (/production/liquefaction/ships) cannot hold terminal project to ransom.
- Financing capacity increasing for well-structured “greenfield” LNG export projects ...and very competitive and flexible financing terms now achievable for robust “second-generation” LNG export projects
- Project finance for regas terminals achievable, particularly for tolling structures...but lenders will require comfort on LNG chain commercial rationale and landed cost competitiveness.